ATTRITION

FEED AND MEAL MILLS

THE HALSTEAD

HAS NO EQUAL

MANUFACTURED BY

THE ENGELBERG HULLER CO.

SYRACUSE, N. Y., U. S. A.

THE
HALSTEAD
ATTRITION MILL

✪ ✪ ✪

Will grind anything that needs grinding.
Is made in two sizes—18 and 24 inch.

In Four Styles—Single Runner 18.
Double Runners 18, 18B and 24 B.

✪ ✪ ✪

Has no Seal Rings.
Adjustment is simple.
Light, durable and strong.
Scientific.
Tested thoroughly.
Economical.
As represented.
Does more work with the same or less power than any other Mill of corresponding size.
Makes satisfied customers.
Increases business.
Latest Wick-oiler Bearings.
Low Cost of Grinding Plates.
Sells for Less than any other first-class Mill.

INTRODUCTION

IN the construction of the "HALSTEAD" Mills we have endeavored to combine simplicity, durability and economy and we are sure that you can be convinced, by actual test, that The HALSTEAD will do more work with the same or less power than any other make.

POWER COSTS MONEY

We expect that you are in the milling business to make a profit. Therefore you should be interested in The HALSTEAD, because it HAS NO EQUAL.

Nearly all Mills are sold by extensive advertising and traveling salesmen, which is expensive and must be eventually paid by the purchaser. Our plan is entirely different as we employ no traveling representatives but depend upon a limited amount of advertising and the superior merits of our Mills practically selling themselves, believing that the most satisfactory proof to a prospective purchaser is referring him to parties, in his vicinity, who are using our Mills.

TERMS

The prices quoted herein are net f. o. b. Syracuse, N. Y., less 2% for cash with the order.

THE ENGELBERG HULLER COMPANY

Syracuse, N. Y., U. S. A.

DESCRIPTION

With The HALSTEAD there is no corrugation of Rolls, no dressing of Burrs, no leakage of grain from the wearing of Seal Rings, as we have dispensed with the Seal Rings thereby not only preventing a leakage of whole grain into the ground feed, which is of great importance, but also eliminating the expense and aggravation incurred to those who operate Mills which are fitted with these troublesome parts.

Our construction is such that we bring the center of the disc itself to the outside of the casing and through this open head the grain passes directly to the grinding plates.

GRINDING PLATES

The main upkeep and expense of any first class Mill is the Grinding Plates. Most Plates are made from material which is too soft to give long service, while our Plates are made from a special mixture which is very hard and tough, but not brittle.

The HALSTEAD Plates have from 20% to 40% more cutting surface, and are alike on both sides, which allows us not only to run our Mill in either direction, (as others do) thereby giving two cutting edges, but after one side is worn out the Plates can be unbolted from the heads and turned around, i. e. put the worn face towards the head, thus presenting an entirely new cutting surface. This is where we get our four cutting edges and save the user of an Attrition Mill a lot of Money.

The HALSTEAD PLATES sell for about one-half the price of other makes.

BEARINGS

Our standard equipment consists of Wick-oiler Bearings but we will supply Ring-oiler when preferred and so ordered.

In wick oiling the principle employed is similar to that in the ordinary lamp, by which oil is carried through a wick to the part where it is used. The wick will feed only as oil is needed and always in the right amount and it will not carry dirt to the shaft as will the ring-oiler. Through this automatic distribution proper lubrication is maintained with minimum of care.

From experiments by us, and numerous reports of other manufacturers, we believe they are the best, most reliable, and least trouble when given reasonable attention.

BEARING BOXES

The bearing boxes are not rigid in the frame but are constructed on the pivot principle so that whatever adjustment is made in one, creates no cramping in the other.

POSITIVE FEED ROLL

Our fluted positive feed roll surpasses any shaking device for regulating an even supply of all kinds of grain under all conditions. It also insures against large pieces of metal or other foreign material entering the mill.

END ADJUSTMENTS

All our Mills are equipped with self-adjustable end-thrust bearings and quick release levers. The former removing all chance of these bearings becoming heated, and the latter allowing the operator to free the mill of grain in order that it will start easier.

If you are interested we would be pleased to give you any further information you may desire.

STYLE 18

You will note from the cut that Style 18 has a differently constructed base than Style 18B or 24B. It can be belted to from above or below the floor and from either right or left angle.

STYLE 18B

This Mill is heavier than our Style 18 and the frame being open on one side permits of belting from nearly any desired angle.

The runners, plates and all parts, except the base, are identical with those of Style 18.

These 18-inch Attrition Mills have a capacity of from twenty-five to fifty bushels per hour according to kind and condition of grain, and the horse power used. See table of details.

STYLE 24B

This machine is constructed on the same lines as our Style 18B but is much larger and heavier. With from twenty to twenty-five horsepower this Mill has a capacity of from fifty to seventy-five bushels per hour, and with from twenty-five to forty horsepower has an output of from seventy-five to one hundred bushels per hour.

The HALSTEAD Attrition Mills are especially adapted for grinding all kinds of grain to any desired fineness. Their work is unequaled by any other Mills and they are fully guaranteed to be exactly as represented.

"TIGER" SINGLE DISC 18"

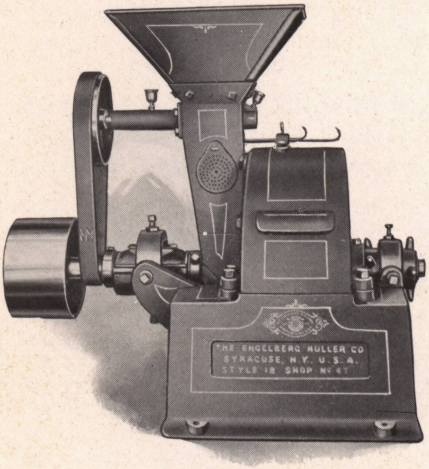


TABLE OF DETAILS

Horse Power required, 6 to 8.
Capacity in bushels per hour, 16 to 24.
Revolutions per minute, 1800 to 2000.
Heads, 18 inches in diameter.
Floor space occupied by base, 26x20 inches.
Floor space occupied over-all, 26x36½ inches.
Drive pulley, 9x5x1¾ inches.
Height over-all, 35¾ inches.
Gross weight for ocean shipment, 680 pounds.
Gross weight for local shipment, 570 pounds.
Net weight, 530 pounds.
Cubic Measurement above, 20 feet.
Price of Mill, $100.00.

The "Tiger" is a small, economical, durable single runner mill, yet it has an exceptional capacity with small horse power, and is well adapted for cracking corn, grinding oats, corn and oats mixed, or in fact any grain that may need grinding.

The distance between the grinding plates is regulated by the two hand-set nuts which can be securely locked when the plates are in the desired position.

STYLE 18

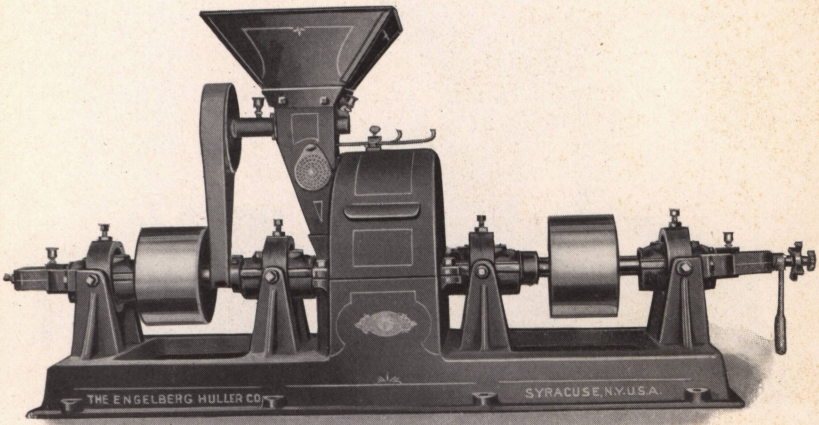


TABLE OF DETAILS

Horse Power, 15 to 20.
Capacity in bushels per hour, 40 to 50.
Revolutions per minute, 1800.
Heads, 18 inches in diameter.
Drive pulley, 9x5x1¾ inches.
Distance between centers of pulleys, 36 inches.
Floor space occupied by base, 24x56 inches.
Floor space occupied over-all, 24x72 inches.
Height over-all, 32¾ inches.
Gross weight for ocean shipment, 1,030 pounds.
Gross weight for local shipment, 850 pounds.
Net weight, 730 pounds.
Cubic measurement, 33 feet.
Price of mill, $150.00.

STYLE 18B AND 24B—FRONT VIEW

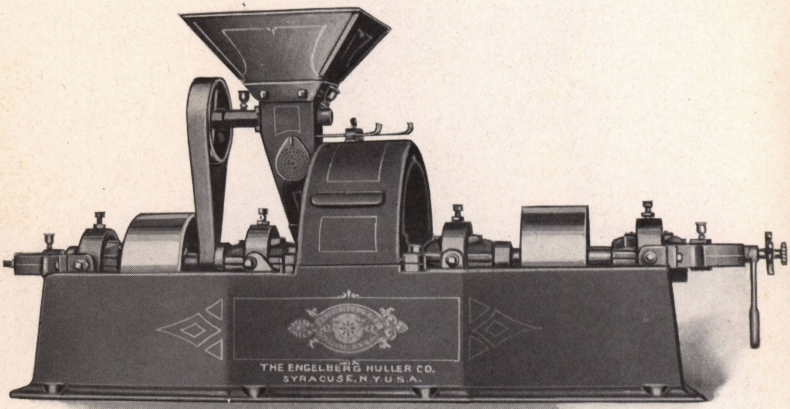


TABLE OF DETAILS FOR 18B

Horse power, 15 to 20.
Capacity in bushels per hour, 40 to 50.
Revolutions per minute, 1,800.
Heads, 18 inches in diameter.
Drive pulley, 9x5x1¾ inches.
Distance between center of pulleys, 34 to 36 inches.
Floor space occupied by base, 24x56 inches.
Floor space occupied over-all, 24x70 inches.
Height over-all, 35¾ inches.
Gross weight for ocean shipment, 1,300 pounds.
Gross weight for local shipment, 900 pounds.
Net weight about 800 pounds.
Cubic measurement, about 34 feet.
Price of mill, $175.00.

STYLE 18B AND 24B—REAR VIEW

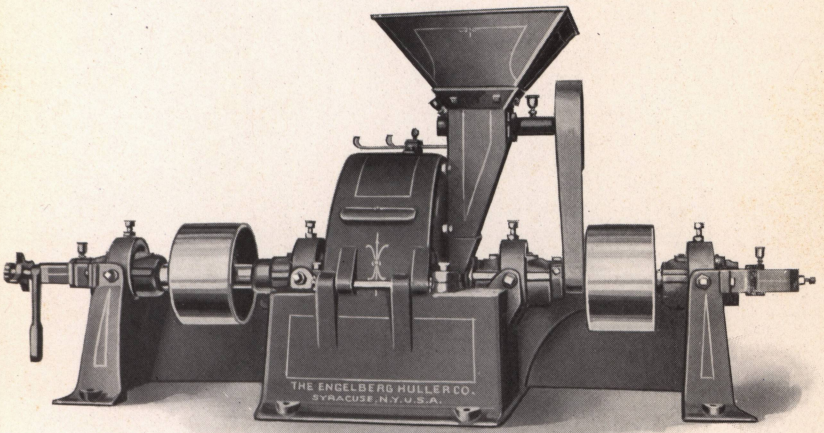
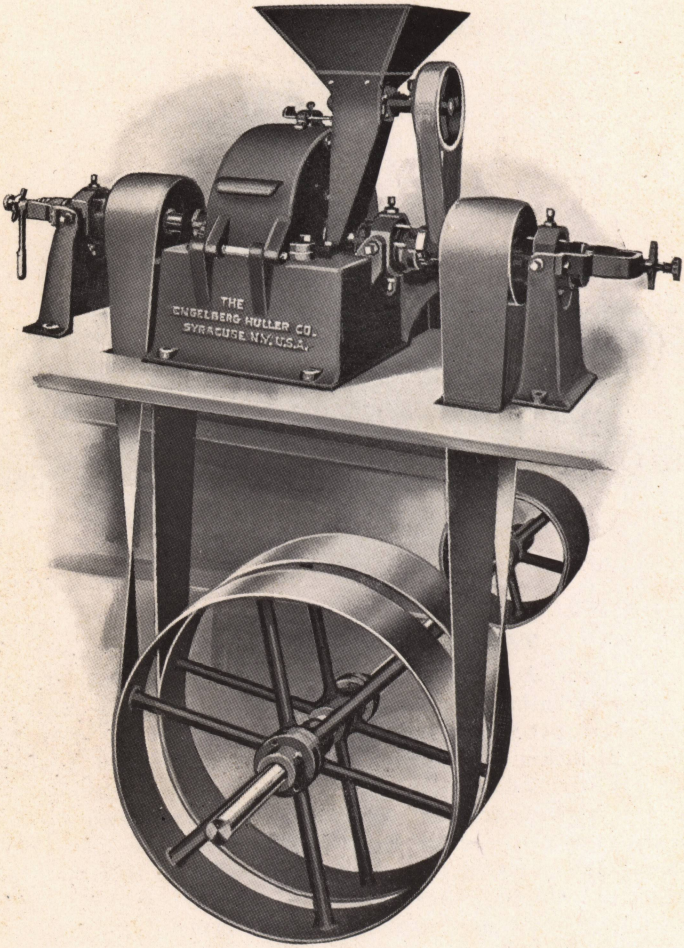
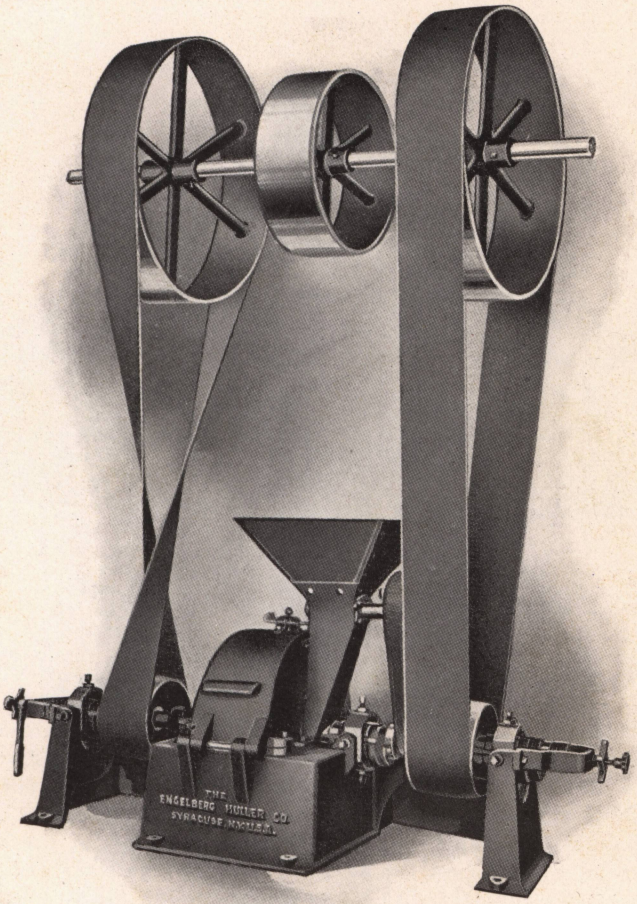


TABLE OF DETAILS FOR 24B

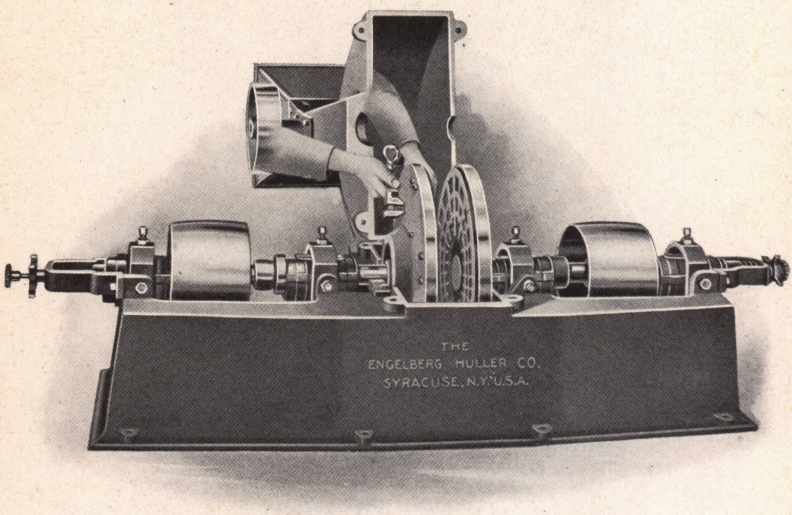
Horse power, 25 to 40.
Capacity in bushels per hour, 75 to 100.
Revolutions per minute, 1,600.
Heads, 24 inches in diameter.
Drive pulley, 12x6x2 inches.
Distance between center of pulleys, 42 inches.
Floor space occupied by base, 34x69 inches.
Floor space occupied over-all, 34x85⅝ inches.
Height over-all, 42 inches.
Gross weight for ocean shipment, 2,300 pounds.
Gross weight for local shipment, 1,650 pounds.
Net weight about 1,500 pounds.
Cubic measurement, about 76 feet.
Price of mill, $250.00.



This cut shows our Endless Belt Drive which may be below or above the mill. One pulley running loose. To reverse the motion of the mill is easily and quickly done without changing the belt.



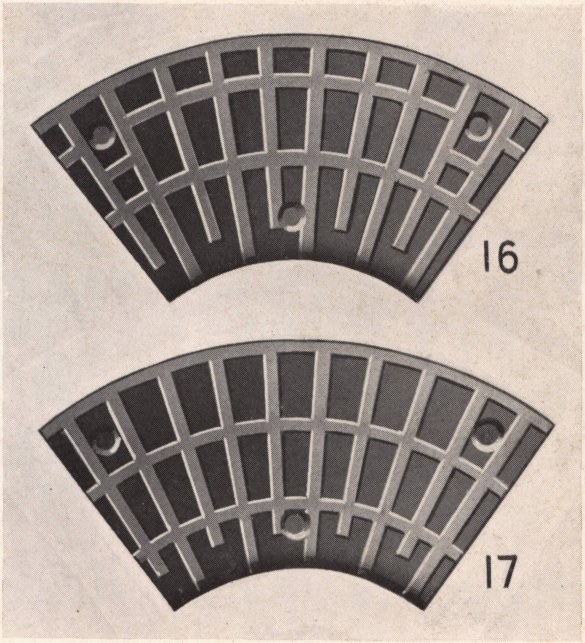
This cut shows how these mills may be driven with a plain quarter twist belt, which may be above, below or at any angle required or made necessary by the position of the mill. All that is necessary to reverse the motion of the grinding heads is to change the belts.



REMOVING THE GRINDING PLATES

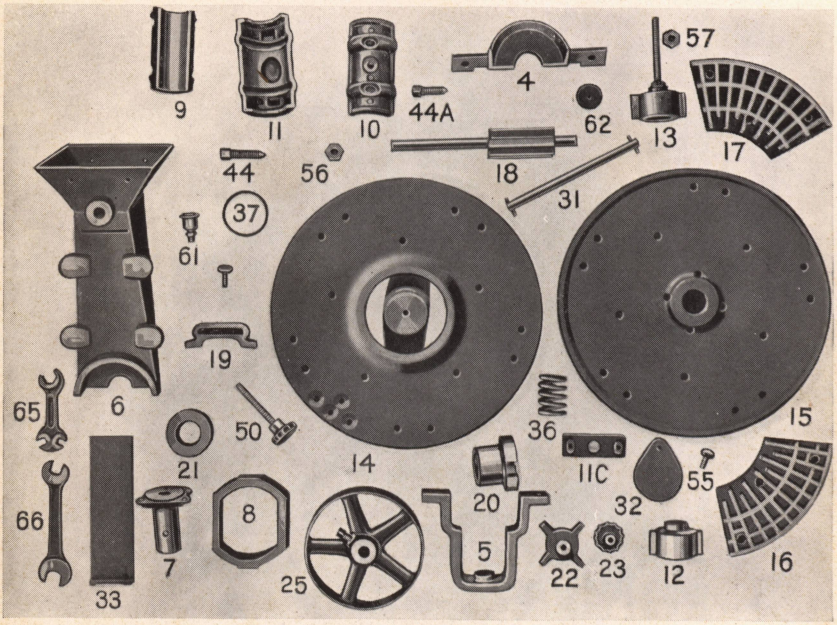
The cover is hung on a hinge and when necessary to change the grinding plates all that is required is to remove the small belt which drives the Positive Feed Roll, remove the yoke on the Quick Release Lever end of the mill, take out the four bolts which hold the cover and then tip same back out of the way. Removing the yoke on the adjustment or release lever end will allow you to slide the disc back, thereby giving plenty of room for changing the plates without lifting either disc out of the case, and without getting the mill out of tram.

In changing the plates be sure that you get those of one size pockets, as shown in cut of Plates No. 16, on one head as those as shown in No. 17 on the other head or runner.



PATENTED SECTION OF GRINDING PLATE

All our plates are alike on both sides, and being reversible, give four cutting edges



SPARE PARTS FOR "HALSTEAD" ATTRITION MILL

As all parts are carefully made from the best of material, very few of them ever need renewing. Most of the parts are interchangeable.

IMPORTANT

In ordering repairs, use part number, also; always give shop number of the machine they are required for. Unless this information is given with orders, we will not be responsible for errors in filling same.

LIST OF SPARE PARTS FOR ATTRITION MILL

4. Seal Plate
5. Yoke
6. Hopper Seat and Feed-spout, combined
7. Positive Feed-Shaft Bearing
8. Bearing Ring
9. Lower half Bearing, Inside
10. Upper half Bearing.
11. Oil Box
11c. Oil Hole Cover
12. Thrust Bearing, Feed end
13. Thrust Bearing, Adjustable end
14. Disc, Feed end
15. Disc, Adjustable end
16 and 17 Grinding Plates
18. Feed-roll
19. Feed-slide Holder
20. Collar Pulley
21. Collar
22. Hand Wheel
23. Hand Wheel (round)
25. Feed-roll Pulley
31. Hinge rod
32. Peek Hole Cover
33. Feed-slide
36. Adjusting Spring
37. Oil Rings
044. Pointed Set-screw 3″
44. Pointed Set-screw 2½″
44A Pointed Set-screw 2″
50. Adjusting Screw
56. Jam Nut
61. Brass Oiler
62. Fiber Button
65. 3-way Wrench
66. 2-way Wrench

IMPROVEMENTS

A few changes have been made, not shown in above cut, the most important being Feed Spout (Nos. 4 and 6) which now divide above the eye, and not at center of shaft. Also our improved wick oiler bearings, and quick release lever.

STANDARD COUNTERSHAFT

For 18-inch Attrition Mill

2 Hangers	13"—15"x1-15/16"
2 Wood Split Pulleys	28"x5"
1 Wood Split Pulley	16"x8"
1 Shaft	1-15/16"x7 feet
2 Collars	1-15/16"

For 24-inch Attrition Mill

2 Hangers	19"—21"x2-7/16"
2 Wood Split Pulleys	36"x6"
1 Wood Split Pulley	20"x10"
1 Shaft	2-7/16"x7 feet
2 Collars	2-7/16"

ENDLESS BELT DRIVE

For 18-inch Attrition Mill

2 Sleeves	
2 Hangers	19"—21"x1-15/16"
2 Wood Split Pulleys	36"x5"
1 Wood Split Pulley	20"x8"
1 Shaft	1-15/16"x7 feet
2 Collars	1-15/16"

For 24-inch Attrition Mill

2 Sleeves	
2 Hangers	23"—25"x2-7/16"
2 Wood Split Pulleys	42"x6"
1 Wood Split Pulley	24"x12"
1 Shaft	2-7/16"x7 feet
2 Collars	2-7/16"

The above are made up from the best of material, design, etc. We do not furnish the cheaper grade of Hangers and Pulleys.

On account of the present high prices of material entering into the above drives, and the unsettled conditions of the market we will be obliged to quote upon application.

THE HALSTEAD
GEARED CORN AND COB CRUSHER

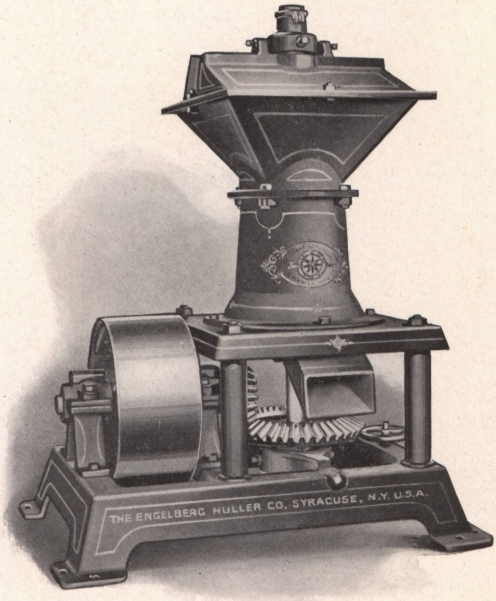
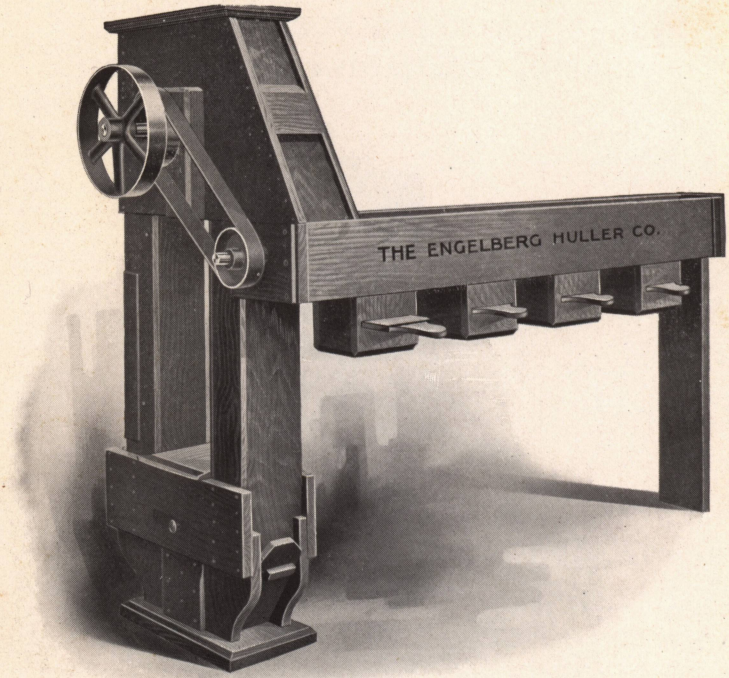


TABLE OF DETAILS

Corn and Cob Crusher	Style No. 13	Style No. 16
Revolutions per minute of horizontal shaft	280	280
Floor space occupied	28x35⅝"	28x35⅝"
Height over-all	48⅝ inches	54⅜ inches
Height from floor to center of shaft	12⅛ inches	12⅛ inches
Price net f. o. b. Syracuse, N. Y.	$65.00	$75.00

The above cut shows our geared Corn and Cob Crusher, and is without doubt the best of its kind on the market. It can be run in either direction, giving it double the wear.



ELEVATOR AND BAGGER

Above is shown our Standard Elevator and Bagger which is one of the most convenient and economical pieces of machinery now on the market. It can be made to elevate the material to any height and convey it any distance.

TABLE OF DETAILS

Elevator and Bagger for	18" Mill	24" Mill
Revolutions per minute	52	52
Capacity in bushels per hour	150	230
Size of buckets	4½x3½"	4x5½"
Width of conveying belt	5 inches	6 inches
Height	77 inches	80 inches
Drive Pulley extra according to size required.		
Price net f. o. b. Syracuse, N. Y.	~~$50.00~~ 100.00	~~$60.00~~ 120.00

CORN SHELLERS

If you are interested in a Corn Sheller we are in a position to supply you with one which we consider very efficient, economical and durable.

Prices quoted upon application.

RULES FOR CALCULATING SPEED OF PULLEYS

1. The diameter of the driver and driven being given, to find the number of revolutions of the driven.

Rule—Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven; the quotient will be the number of revolutions.

2. The diameter and the revolutions of the driver being given to find the diameter of the driven, that shall make any given number of revolutions in the same time.

Rule—Multiply the diameter of the driver by its number of revolutions, and divide the product by the number of revolutions of the driven; the quotient will be its diameter.

3. To ascertain the size of the driver.

Rule—Multiply the diameter of the driven by the number of revolutions you wish to make, and divide the product by the revolutions of the driver; the quotient will be the size of the driver.